PROPANE

Aqua-Hot®

HYDRONIC HEATING SYSTEM

375-LP



WARNING: If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury, or death.

— Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

— WHAT TO DO IF YOU SMELL GAS

- **Evacuate all persons from the vehicle.**
- **Shut off the gas supply at the gas container or source.**
- **Do not touch any electrical switch or use any phone or radio in the vehicle.**
- **Do not start the vehicle's engine or electric generator.**
- **Contact the nearest gas supplier or qualified service technician for repairs.**
- **If you cannot reach a gas supplier or qualified service technician, contact the nearest fire department.**
- **Do not turn on the gas supply until the gas leak(s) has been repaired.**

— Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

AVERTISSEMENT. Assurez-vous de bien suivre les instructions données dans cette notice pour réduire au minimum le risque d'incendie ou d'explosion ou pour éviter tout dommage matériel, toute blessure ou la mort.

— Ne pas entreposer ni utiliser d'essence ou ni d'autres vapeurs ou liquides inflammables à proximité de cet appareil ou de tout autre appareil.

— QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ :

- **Évacuez le véhicule.**
- **Coupez l'alimentation en gaz au réservoir ou à la source.**
- **Ne touchez à aucun interrupteur ; ne pas vous servir du téléphone ou de la radio du véhicule.**
- **Ne pas démarrer le moteur du véhicule ni aucune génératrice électrique.**
- **Appelez le fournisseur de gaz le plus proche ou un technicien qualifié.**
- **Si vous ne pouvez rejoindre ni un fournisseur ni un technicien qualifié, appelez le service des incendies le plus proche.**
- **Ne pas rétablir l'alimentation en gaz tant que la fuite n'a pas été réparée.**

— L'installation et l'entretien doivent être assurés par un installateur ou un service d'entretien qualifié ou par le fournisseur de gaz.

OWNERS MANUAL

This manual should be maintained in legible condition and kept in a safe, easily-accessible location for future reference.

Please read the complete Owner's Manual prior to operating the Aqua-Hot Hydronic Heating System. Also, be sure to fill out and mail in the "Warranty Registration" card located at the front of this manual.

The Aqua-Hot Heating System is a Hydronic Heating System (heating with hot water) that provides interior zone heating where and when it is needed, as well as a continuous, on-demand supply of domestic hot water. Both heating features are accomplished by a 12 Volt-DC powered Propane-Burner and a 120 Volt-AC powered Electric Heating Element, which maintain the temperature of the Aqua-Hot's antifreeze and water heating solution. Be sure to reference Figures 1-A through 1-C for a complete component overview.

NOTE: This Aqua-Hot product utilizes a propylene glycol based antifreeze and water heating solution. This propylene glycol based solution is a Boiler type antifreeze that is "Generally Recognized as Safe" (GRAS) by the FDA. For additional information regarding this "GRAS" antifreeze product, please reference Appendix A, contact the Aqua-Hot Heating Systems Technical Support Department at **1-800-685-4298**, or visit the web site at **www.aqua-hot.com**.

Danger, Warning, Caution, and Note Boxes:

Danger, Warning, Caution, and Note boxes appear throughout this manual as a means of alerting the operator to important information.

⚠ DANGER! ⚠

INDICATES THAT PERSONAL INJURY IS LIKELY OR IMMINENT.

WARNING!

Indicates that serious damage to the heater will occur and personal injury is possible as well.

CAUTION:

Indicates that damage to the heater is possible.

NOTE: Indicates information that requires special attention by the operator.

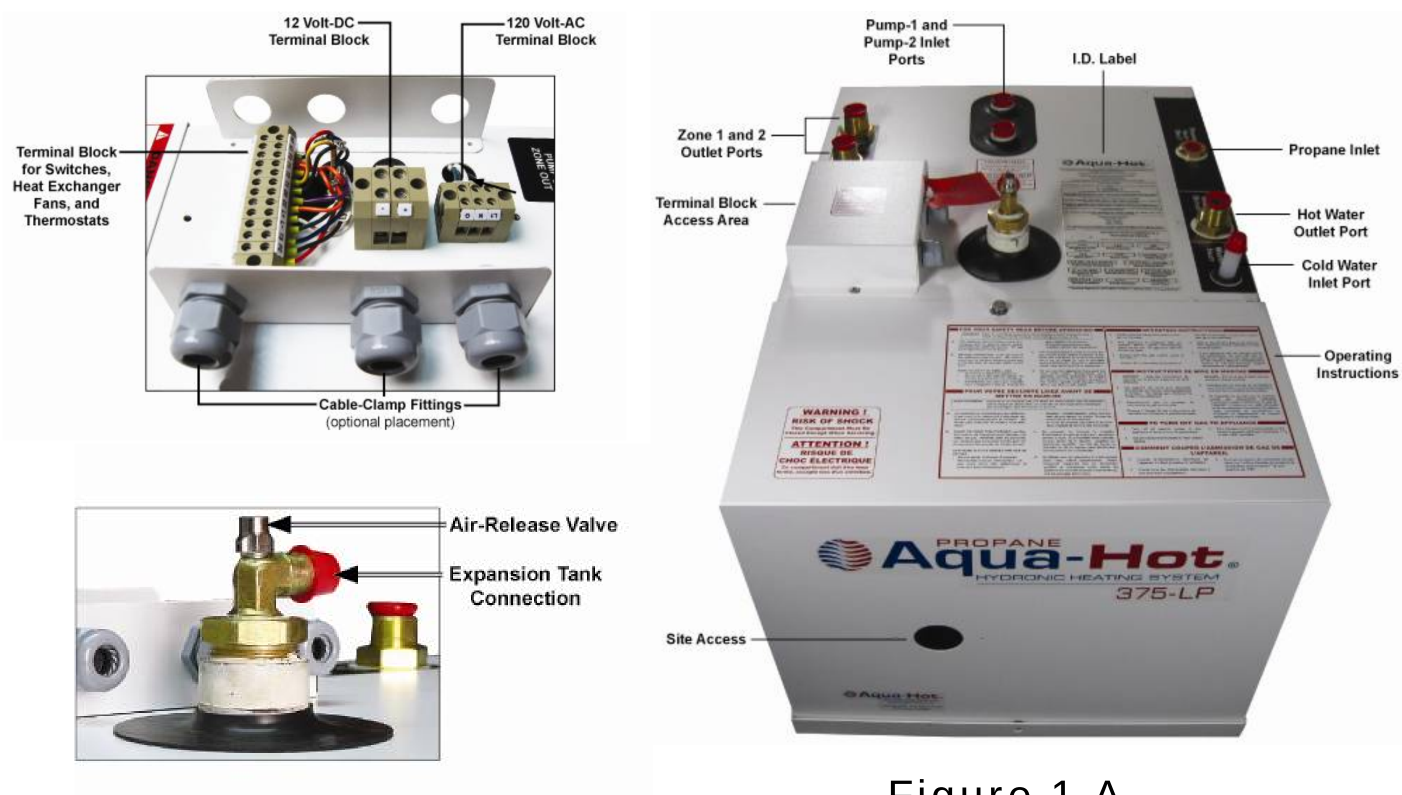


Figure 1-A

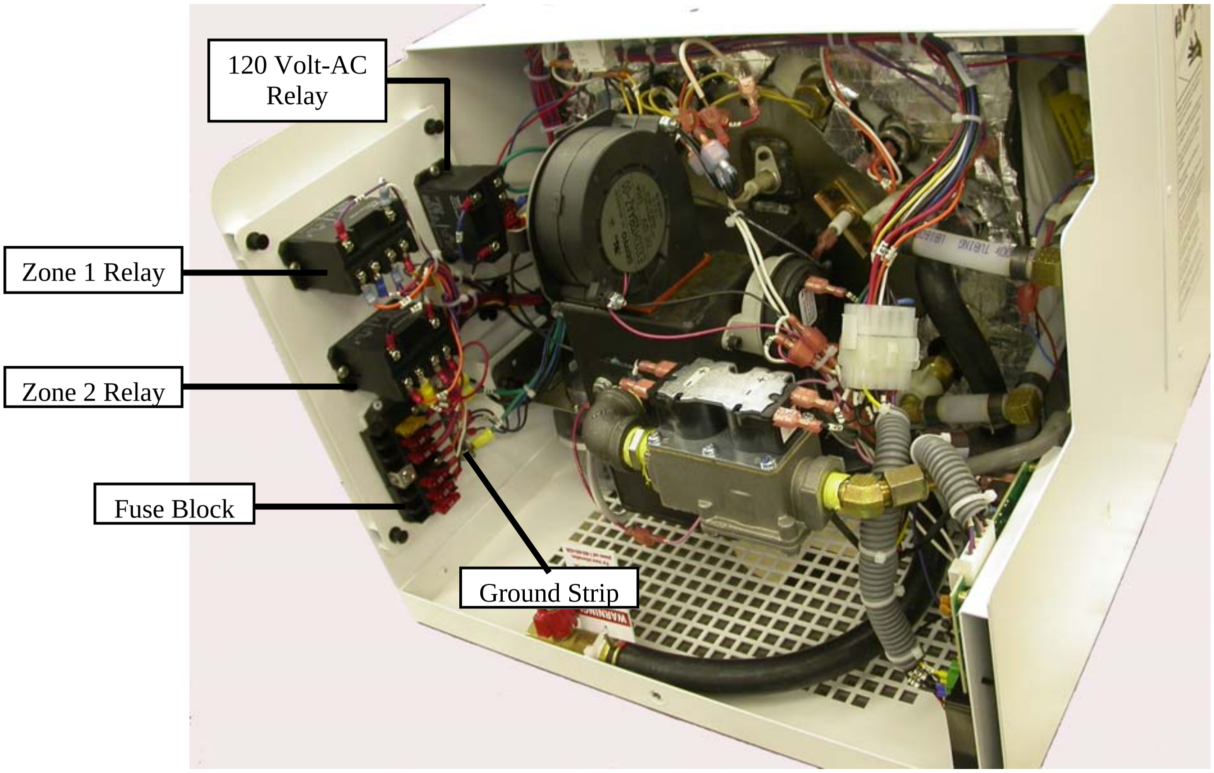


Figure 1-B

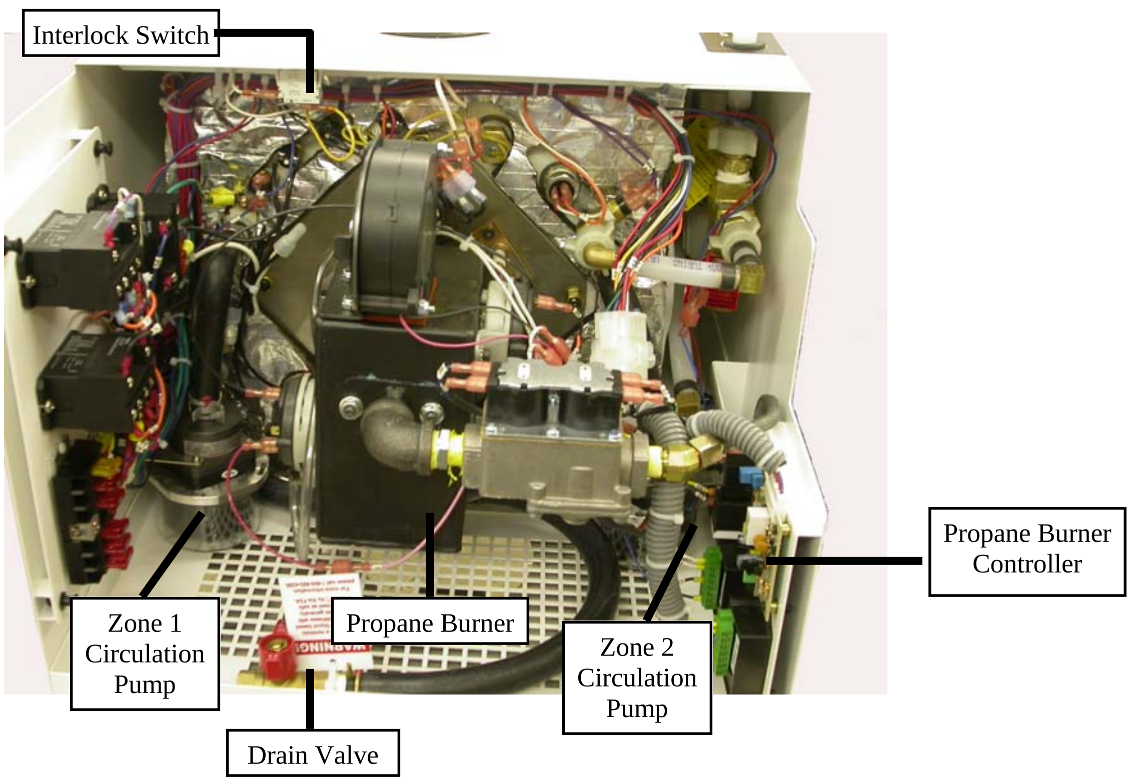
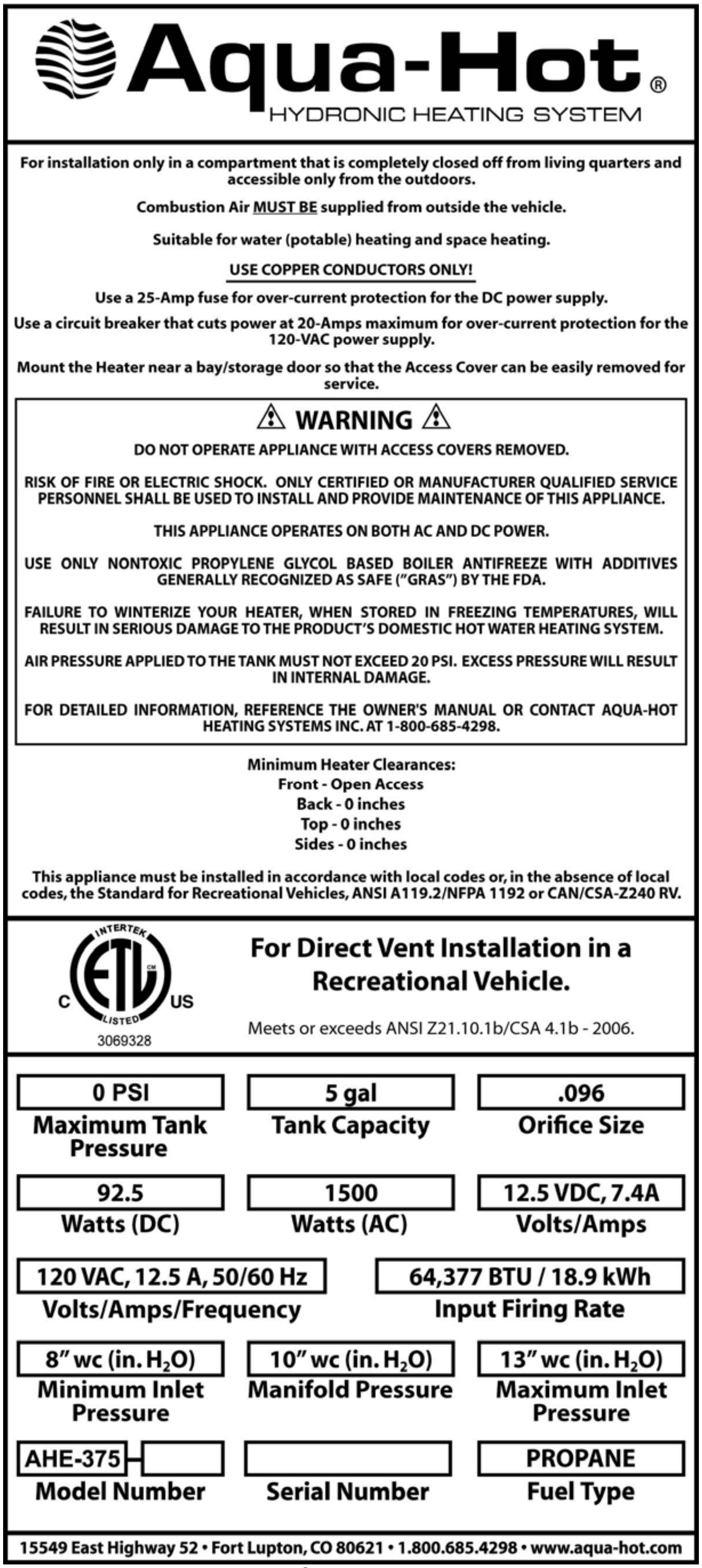


Figure 1-C

375-LP I.D. Label



Aqua-Hot®
HYDRONIC HEATING SYSTEM

For installation only in a compartment that is completely closed off from living quarters and accessible only from the outdoors.

Combustion Air MUST BE supplied from outside the vehicle.

Suitable for water (potable) heating and space heating.

USE COPPER CONDUCTORS ONLY!

Use a 25-Amp fuse for over-current protection for the DC power supply.

Use a circuit breaker that cuts power at 20-Amps maximum for over-current protection for the 120-VAC power supply.

Mount the Heater near a bay/storage door so that the Access Cover can be easily removed for service.

⚠ WARNING ⚠

DO NOT OPERATE APPLIANCE WITH ACCESS COVERS REMOVED.

RISK OF FIRE OR ELECTRIC SHOCK. ONLY CERTIFIED OR MANUFACTURER QUALIFIED SERVICE PERSONNEL SHALL BE USED TO INSTALL AND PROVIDE MAINTENANCE OF THIS APPLIANCE.

THIS APPLIANCE OPERATES ON BOTH AC AND DC POWER.

USE ONLY NONTOXIC PROPYLENE GLYCOL BASED BOILER ANTIFREEZE WITH ADDITIVES GENERALLY RECOGNIZED AS SAFE ("GRAS") BY THE FDA.

FAILURE TO WINTERIZE YOUR HEATER, WHEN STORED IN FREEZING TEMPERATURES, WILL RESULT IN SERIOUS DAMAGE TO THE PRODUCT'S DOMESTIC HOT WATER HEATING SYSTEM.

AIR PRESSURE APPLIED TO THE TANK MUST NOT EXCEED 20 PSI. EXCESS PRESSURE WILL RESULT IN INTERNAL DAMAGE.

FOR DETAILED INFORMATION, REFERENCE THE OWNER'S MANUAL OR CONTACT AQUA-HOT HEATING SYSTEMS INC. AT 1-800-685-4298.

Minimum Heater Clearances:
Front - Open Access
Back - 0 inches
Top - 0 inches
Sides - 0 inches

This appliance must be installed in accordance with local codes or, in the absence of local codes, the Standard for Recreational Vehicles, ANSI A119.2/NFPA 1192 or CAN/CSA-Z240 RV.

INTERTEK ETL LISTED C US 3069328

For Direct Vent Installation in a Recreational Vehicle.

Meets or exceeds ANSI Z21.10.1b/CSA 4.1b - 2006.

0 PSI — Maximum Tank Pressure	5 gal — Tank Capacity	.096 — Orifice Size
92.5 — Watts (DC)	1500 — Watts (AC)	12.5 VDC, 7.4A — Volts/Amps
120 VAC, 12.5 A, 50/60 Hz — Volts/Amps/Frequency	64,377 BTU / 18.9 kWh — Input Firing Rate	
8" wc (in. H_2O) — Minimum Inlet Pressure	10" wc (in. H_2O) — Manifold Pressure	13" wc (in. H_2O) — Maximum Inlet Pressure
AHE-375- — Model Number	Serial Number	PROPANE — Fuel Type

15549 East Highway 52 • Fort Lupton, CO 80621 • 1.800.685.4298 • www.aqua-hot.com

Figure 2

WARNING!

The Aqua-Hot's Exhaust is HOT!

<u>DO NOT</u> park in areas where dry conditions exist underneath the vehicle as a fire may result (i.e., in a dry, grassy field)!

<u>DO NOT</u> operate the Aqua-Hot's Propane-Burner inside an enclosed building!

The Heater must be switched *OFF* when refueling.

CAUTION:

<u>**DO NOT**</u> operate the Propane-Burner and/or Electric Heating Element without the antifreeze and water heating solution in the Aqua-Hot's Boiler Tank. Failure to do so will cause serious damage to the Heater.

<u>Activating the Aqua-Hot Heating System:</u>

Propane-Burner:
Turn the Burner switch **ON**; reference Figure 3. This procedure will activate the Propane-Burner and the indicator light located adjacent to the Burner switch. Allow <u>10-20 minutes</u> for the Aqua-Hot System to reach operating temperature. Please note that the Propane-Burner is the **<u>primary heat source</u>** for heating both the interior and the domestic hot water (such as when cool ambient temperatures exist and/or when there is a high demand for domestic hot water).

Electric Heating Element:

Turn the Electric switch **ON**; reference Figure 3. This procedure will activate the 120 Volt-AC Electric Heating Element and the indicator light located adjacent to the Electric switch. Allow <u>1-2</u> hours for the Aqua-Hot System to reach operating temperature.

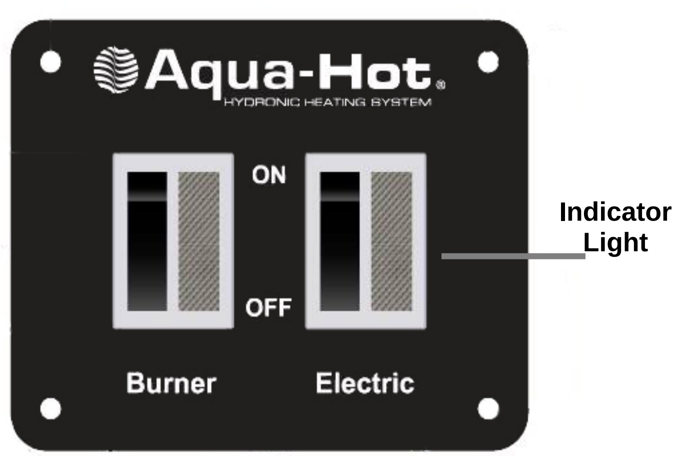


Figure 3

FOR YOUR SAFETY READ BEFORE OPERATING

WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.

A. This appliance does not have a pilot. It is equipped with an ignition device, which automatically lights the burner. Do not try to light the burner by hand.

B. BEFORE OPERATING, smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to push in or turn the gas control knob. Never use tools. if the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician. Forced or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

POUR VOTRE SÉCURITÉ LISEZ AVANT DE METTRE EN MARCHE

AVERTISSEMENT. Quiconque ne respecte pas à la lettre les instructions dans la présente notice risque de déclencher un incendie ou une explosion entraînant des dommages, des blessures ou la mort.

A. Cet appareil ne comparte pas de veilleuse. Il est muni d'un dispositif d'allumage qui allume automatiquement le brûleur. Ne tentez pas d'allumer le brûleur manuellement.

B. AVANT DE FAIRE FONCTIONNER, reniflez tout autour de l'appareil pour déceler une odeur de gaz. Reniflez près du plancher, car certains gaz song plus lourds que l'air et peuvent s'accumuler au niveau du sol.

QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAS :

- Ne pas tenter d'allumer d'appareil.
- Ne touchez à aucun interrupteur ; ne pas vous servir des téléphones se trouvant dans le bâtement.
- Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez rejoindre le fournisseur, appelez le service des incendies.

C. Ne poussez ou tournez la manette d'admission du gaz qu'à la main ; ne jamais utiliser d'outil. Si la manette reste coincée, ne pas tenter de la réparer ; appelez un technicien qualifié. Le fait de forcer la manette ou de la réparer peut déclencher une explosion ou un incendie.

D. N'utilisez pas cet appareil s'il a été plongé dans l'eau, même partiellement. Fates inspecter l'appareil par un technicien qualifié et remplacez toute partie du système de contrôle et toute commande qui ont été plongés dans l'eau.

OPERATING INSTRUCTIONS

1. STOP! Read the safety information to the left on this label.
2. This appliance is equipped with an ignition device, which automatically lights the burner. Do not try to light the burner by hand.
3. Ensure that the gas control valve is turned on.

   Follow "B" in the safety information to the left on this label. If you don't smell gas, go to the next step.
4. Refer to the Owner's Manual for information regarding normal operation of this heating system.
5. If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" below on this label and refer to the Owner's Manual troubleshooting section or call the technical support department at 1-800-685-4298.

INSTRUCTIONS DE MISE EN MARCHE

1. ARRÊTEZ! Lisez les instructions de sécurité sur la portion à gauche de cette étiquette.
2. Cet appareil est muni d'un dispositif d'allumage qui allume automatiquement le brûleur. Ne tentez pas d'allumer le brûleur manuellement.
3. Assurez-vous que la soupape de contrôle de gaz est bien ouverte.

   Passez à l'étape B des instructions de sécurité sur la portion à gauche de cette étiquette. S'il n'y a pas d'odeur de gaz, passez à l'étape suivante.
4. Référez au Manuel du propriétaire pour des informations au sujet du fonctionnement normal de ce système de chauffage.
5. Si l'appareil ne fonctionne pas, veuillez suivre les instructions « Pour couper le gaz vers l'appareil » ci-dessous sur cette étiquette et référez à la section Dépannage du Manuel du propriétaire ou appelez le service de soutien technique au 1.800.685.4298.

TO TURN OFF GAS TO APPLIANCE

1. Turn off all electric power to the appliance if service is to be performed.
2. Set all interior thermostats to their lowest setting.
3. Turn the gas control knob located on the heater's propane inlet port clockwise ↻ to the "OFF" position.

COMMENT COUPER L'ADMISSION DE GAZ DE L'APPAREIL

1. Coupez l'alimentation électrique de l'appareil s'il faut procéder à l'entretien.
2. Réglez tous les thermostats intérieurs à leur réglage le plus bas.
3. Tournez le bouton de contrôle du gaz, situé sur le port d'entrée de propane du chauffe-eau, vers la droite ↻ à la position « OFF » (Arrêt).

Zone Thermostat Operation

Interior Room Thermostat:

Simply adjust each Interior Room Thermostat to the desired temperature. Then, whenever an Interior Room Thermostat "calls for heat," the Aqua-Hot's Circulation Pump and Interior Heat Exchanger Fans will be activated. These devices, together, will supply warmth and comfort to each interior heating zone. The Aqua-Hot must be at operating temperature in order for the zones to function. Please contact the specific motorhome manufacturer for the exact location of the Interior Room Thermostats.

Fresh Water Tank Thermostat:

Simply adjust the Thermostat for Bay Heating to a minimum of 40°F. This will prevent freezing of the domestic water storage system. Please contact the specific motorhome manufacturer for the exact location of the Fresh Water Tank Thermostat.

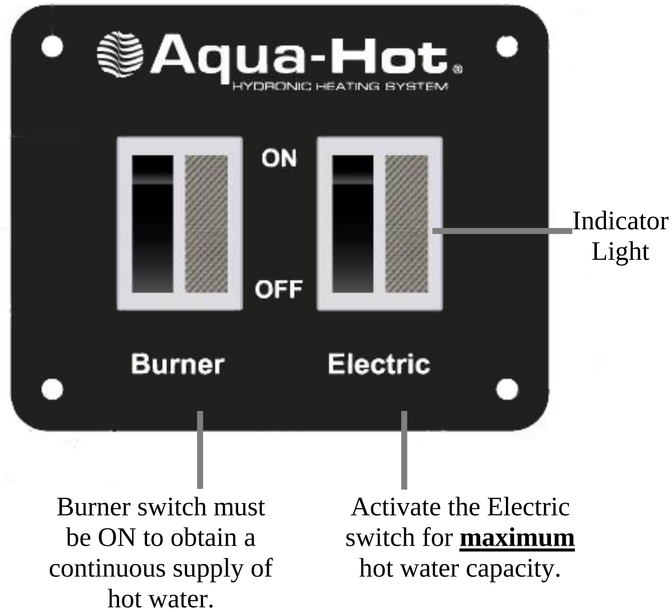


Figure 4

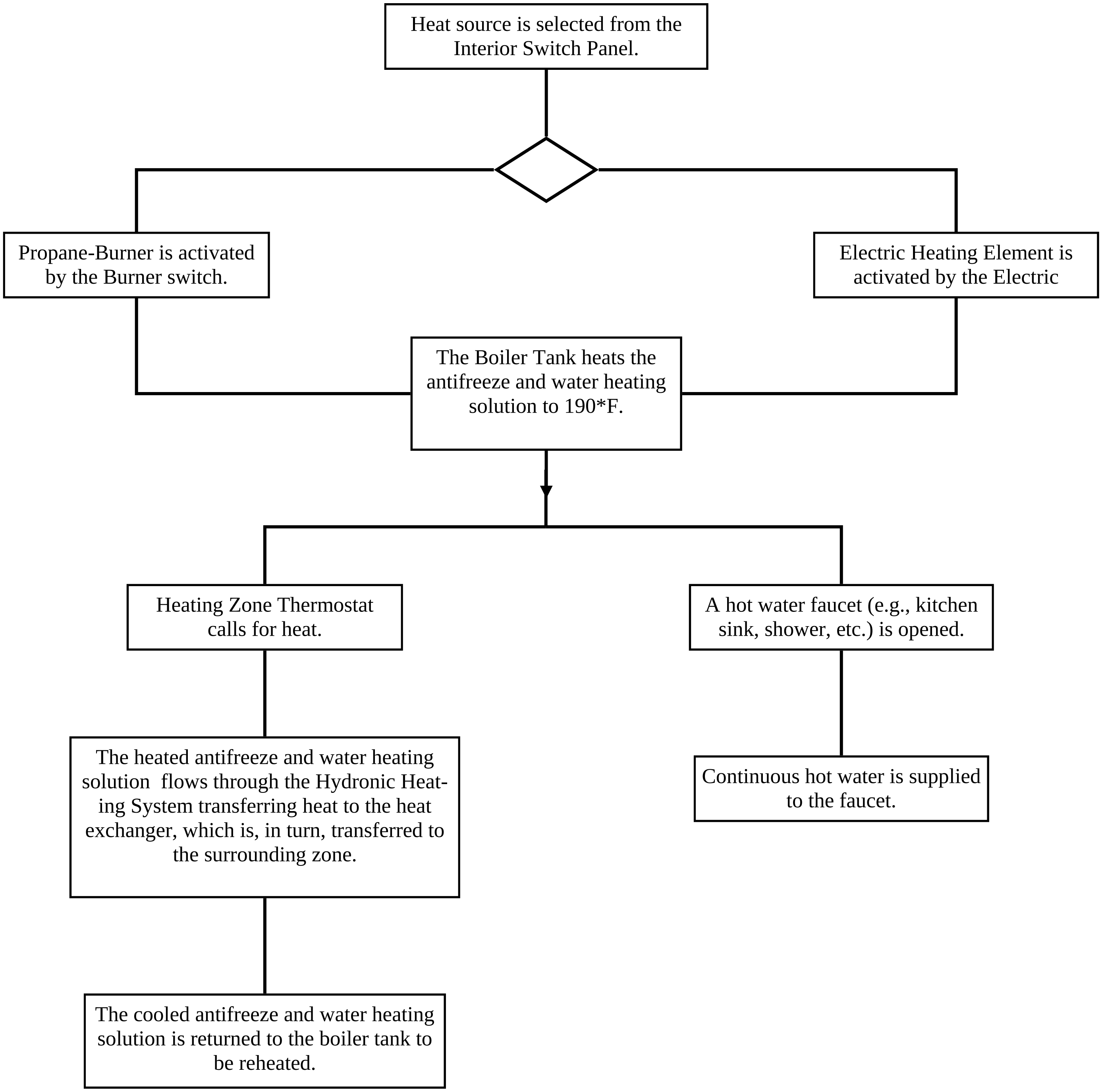
Using the Domestic Water Heating System

When the Aqua-Hot is at operating temperature, the domestic water is automatically heated as it is being used. Because the Aqua-Hot does not store any hot water, simply open any hot water faucet and a continuous supply of domestic hot water will be present within a few seconds. This hot water feature is **continuous** and is accomplished by the Aqua-Hot's Domestic Water Heating System. The Propane-Burner switch on the Interior Switch Panel must be **ON** in order to obtain a continuous supply of hot water (e.g., during showers); be sure to also activate the Electric Element switch for **maximum** hot water capacity. Reference Figure 4.

NOTE: The Aqua-Hot's "Domestic Water Priority System" disables the interior zone heating fans and the zone circulation pumps whenever domestic hot water is being used on a continuous basis (e.g., during showers). Once the demand for continuous domestic hot water ceases, the Aqua-Hot will enable the fans and the pumps to operate and provide heat to the Heating Zones.

NOTE: Both the propane-burner and electric heating element are thermostatically controlled. Either, or both, heating sources will automatically maintain the temperature of the Aqua-Hot's antifreeze and water heating solution between approximately 160ºF and 190ºF(±5). Therefore, to heat the motorhome/ domestic hot water, simply choose the desired heat source(s) and leave the switch(es) (i.e., Burner and or Electric Element) **ON**.

Aqua-Hot Operational Flowchart



⚠ DANGER! ⚠

WHEN THE AQUA-HOT IS AT MAXIMUM OPERATING TEMPERATURE, THE COOLANT WILL BE VERY HOT! IF THE AQUA-HOT'S HEATING SYSTEM IS ACCESSED, SCALDING BY HOT VAPOR OR COOLANT COULD RESULT!
BEFORE CLEANING OR SERVICING, DISCONNECT ALL POWER SUPPLIES!

WARNING!

DO NOT operate the Propane-Burner and/or the Electric Heating Element without the antifreeze and water heating solution in the Aqua-Hot's Boiler Tank; doing so will cause serious damage to the Heater.

Propylene Glycol that is "Generally Recognized As Safe" by the FDA must be utilized for the antifreeze and water heating solution.

NOTE: For additional information regarding this propylene glycol-based, boiler-type antifreeze that has been "Generally Recognized As Safe" by the FDA, please reference Appendix A, contact Aqua-Hot Heating Systems Technical Support Department at **1-800-685-4298**, or visit the Web site at **www.aqua-hot.com**.

Maintenance Schedule

Monthly Maintenance:

Check the Aqua-Hot's antifreeze and water heating solution to ensure that it is at the proper level. This can be accomplished by visually checking the coolant level in the Aqua-Hot's Expansion Tank; reference Figure 5. Please note that the coolant level should be checked **only** when the Aqua-Hot is at maximum operating temperature (i.e., immediately after the Propane-Burner cycles OFF). When maximum operating temperature, the antifreeze and water heating solution should be at the level marked "HOT" on the Expansion Tank.

Replenishing the Antifreeze and Water Heating Solution:

If the antifreeze and water heating solution needs replenishing, remove the Expansion Tank's cap and fill the Expansion Tank to the "HOT" level mark. When refilling, open the Air Release Valve located on the Expansion Tank Connection to release air pockets; reference Figure 6. Hold the valve open until all air is released. If necessary, refill the Expansion Tank again. Be sure the valve is closed when finished by hand-tightening. Reference Appendices A through C in order to determine the correct ratio of antifreeze to water, the proper type of antifreeze, and the water quality recommendations for the Aqua-Hot Hydronic Heating System's antifreeze and water heating solution.

Annual Maintenance:

No annual maintenance is required above the normal monthly maintenance. Reference the Aqua-Hot's Service and Parts Manual for spare parts information and detailed replacement instructions, contact the Aqua-Hot Heating Systems Technical Support Department at **1-800-685-4298** for assistance or to locate the nearest Aqua-Hot Service Center, or visit the Web site at www.aqua-hot.com.

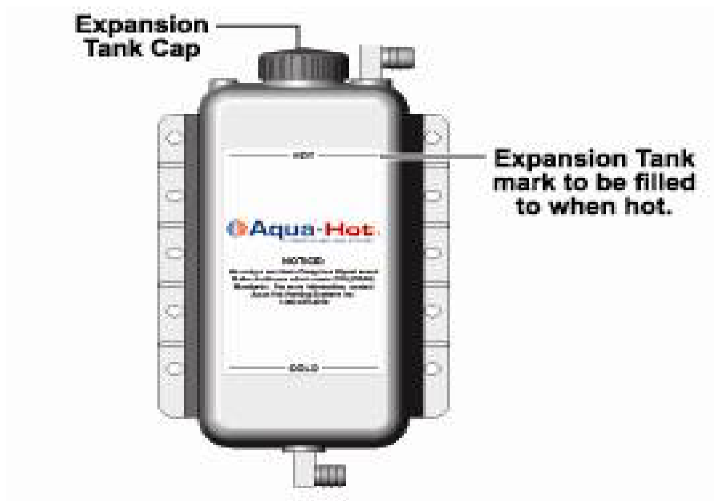


Figure 5

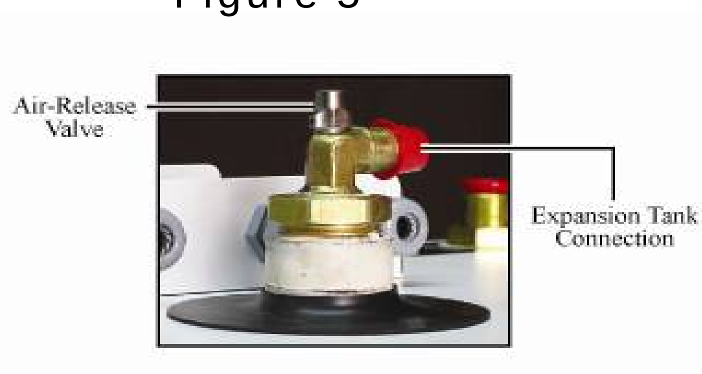


Figure 6

WARNING!

Not winterizing the Aqua-Hot when freezing temperatures are present will result in serious damage to the Aqua-Hot's Domestic Water Heating System. Also, be sure to use an FDA approved, "GRAS" rated antifreeze for winterization.

NOTE: The Aqua-Hot can continue to be used for interior zone heating once the domestic water heating system has been drained and winterized.

The Aqua-Hot's Domestic Water Heating System must be completely drained of domestic water any time the heater is stored where freezing temperatures may be experienced.

Winterizing the Domestic Water Heating System:

Please follow these instructions when winterizing the Aqua-Hot's Domestic Water Heating System; reference Figure 8:

1. Completely drain the fresh water storage tank.
2. Disconnect the domestic water demand pump's suction line from the fresh water storage tank.
3. Attach an adequate piece of hose onto the suction side of the domestic water demand pump.
4. Place the opposite end of the hose into an adequate supply of FDA-approved "GRAS" RV Antifreeze.
5. Open and close all interior and exterior water faucets, one at a time, until only pure RV Antifreeze is present. Perform this procedure for both the hot and cold faucets.
6. Remove the hose and reconnect the domestic water demand pump's suction line to the fresh water storage tank.

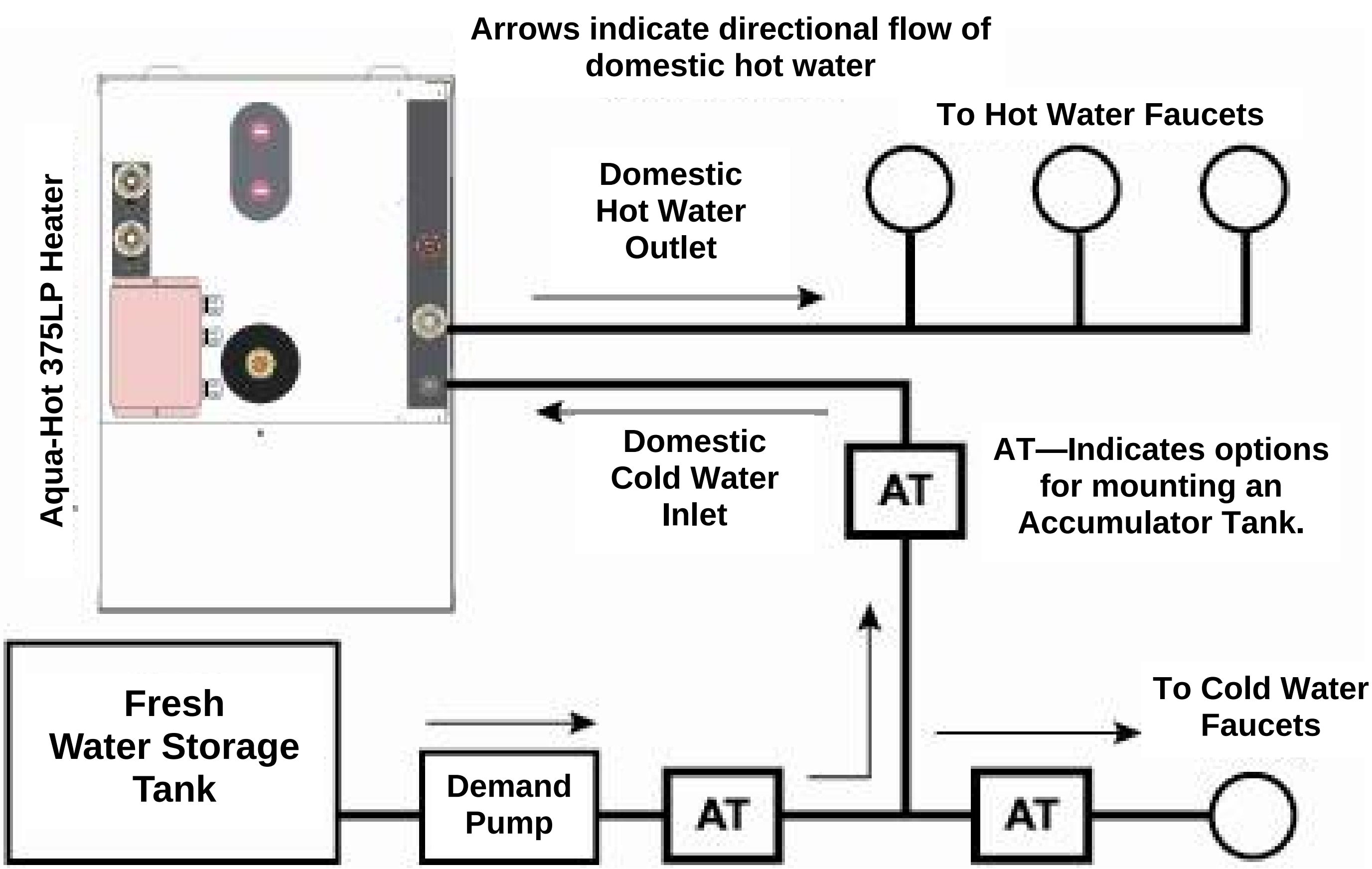
De-Winterizing the Domestic Water Heating System:

For de-winterization, completely fill the fresh water storage tank. Open and close all interior and exterior water faucets, one at a time, until only clear water is present/visible.
Reference Figure 8.

If disinfecting the potable water system after de-winterizing, be sure to follow RVIA's "**Instructions for Disinfection of Potable Water Systems on Recreation Vehicles**." These instructions can be obtained by contacting the Recreational Vehicle Industry Association at **(703) 620-6003**, visiting them online at **www.rvia.com**, or writing to them at the following address:

Recreation Vehicle Industry Association
1896 Preston White Drive
P.O. Box 2999
Reston, VA 20195-0999

Figure 8



TROUBLESHOOTING

Should the Aqua-Hot Hydronic Heating System fail to operate, complete the following checks:

1) Verify that the Aqua-Hot's access cover is securely installed. The Aqua-Hot Hydronic Heating System will not operate if the access cover is not fully installed.

2) Ensure that the main propane tank contains a sufficient level of propane.

3) Ensure that the Aqua-Hot's boiler tank has an adequate supply of antifreeze and water heating solution by checking the level at the expansion tank. If the level is low, reference the maintenance section of this manual for refilling instructions.

4) Verify that the wires attached to the ground strip are firmly attached; reference Figure 1-B

If the Aqua-Hot Heating System's failure to operate is not resolved with the aforementioned checks, please contact the Aqua-Hot Heating Systems Technical Support Department at **1-800-685-4298** for additional assistance or visit the web site at **www.aqua-hot..com**

APPENDIX A: ANTIFREEZE TYPES

The following information addresses the necessary usage of a propylene glycol based "boiler" type antifreeze in the Aqua-Hot. Propylene glycol is a safer alternative to the more toxic ethylene glycol antifreeze; however, as mandated by IAPMO (International Association of Plumbing and Mechanical Officials), only those propylene glycol based "boiler" type antifreezes deemed "Generally Recognized as Safe" (GRAS) by the FDA should be utilized.

Because of the significant impact various types of antifreeze can have on a Hydronic Heating System, including the level of safety provided, it has been recognized that there is a need to provide an explanation regarding two additional prominent types of antifreeze/coolant available.

The following information should be utilized as an educational means of ensuring that the proper type of propylene glycol based antifreeze is selected:**RV & Marine Antifreeze:**

These types of propylene glycol based antifreeze products are formulated specifically for "winterizing" applications only. Although RV & Marine antifreeze is often "Generally Recognized as Safe" by the FDA, <u>it should never be used in the Aqua-Hot's Hydronic Heating System</u>. This type of antifreeze is not formulated to transfer heat, which is essential to the Heating System's functionality and does not contain rust inhibitors. Please note, however, that RV & Marine antifreeze can be utilized to winterize the Aqua-Hot's Domestic Water Heating System.

APPENDIX B: ANTIFREEZE MIXTURE WATER QUALITY RECOMMENDATIONS

In order to ensure maximum performance and longevity of an Aqua-Hot Heating System's Boiler Tank and associated components, it has been determined that there is a need to use distilled, de-ionized, or soft water in combination with concentrated propylene glycol for the Aqua-Hot's antifreeze and water heating solution. Please note that this is only necessary when mixing concentrated propylene glycol antifreeze with water; suppliers of pre-mixed antifreeze are responsible for the use of high-quality (distilled, de-ionized, or soft) water when preparing their antifreeze for sale.

Hard water possesses a high-level of calcium and magnesium ions, which deplete the propylene glycol antifreeze's corrosion inhibitors. This, in turn, causes the antifreeze and water heating solution to begin turning acidic, which can corrode the Aqua-Hot's Boiler Tank and associated components prematurely. Therefore, concentrated propylene glycol should be diluted with distilled, de-ionized, or soft water which is 80 ppm or less in total hardness. The local water agency should have up-to-date water quality reports which should indicate if the local tap water is within this guideline.

The following information addresses the process of selecting an antifreeze and water mixture ratio that provides adequate Freeze, Boiling, and Rust/Anti-Corrosive protection. A 50/50 mixture ratio is recommended, which will result in a freeze point of approximately -28ºF and a boil point of approximately 222ºF.

The following information should be utilized for the purpose of clarifying some terms commonly associated with antifreeze.

Freeze Point and Burst Point:

Antifreeze lowers the freezing point of any liquid, to which it has been added, by preventing the formation of ice crystals; however, as the ambient temperature continues to decline, the water in the solution will attempt to attain a solid state. The point in which the water begins to solidify is termed the "Freeze Point." Although the water in the solution has begun to freeze, producing a "slushy" consistency, the antifreeze in the solution will continue to combat the normal expansion of the solution as it freezes. The point in which the solution can begin to expand, due to colder temperatures, is called the "Burst Point." Once the solution reaches the burst point, the potential is present for ruptured pipes to exist. The burst point of the antifreeze and water heating solution is dependent upon the brand of propylene glycol employed.

Boiling Point:

The Aqua-Hot utilizes the antifreeze and water heating solution as a transportation means for the heat produced from the internal processes. The antifreeze absorbs the heat created until its boiling point is reached; it is at this point that the liquid turns to a gas and is expelled to prevent the Heating System from overheating. Each time the boiling point is reached, a loss of efficiency occurs because the heat produced is expelled rather than utilized for the function of the heating system. Therefore, a higher boiling point is desired in order to combat the loss of efficiency, which allows the antifreeze to transport the heat created from the internal process throughout the motorhome where it can be utilized productively rather than dissipating due to its change from a liquid to a gas.

Rust and Anti-Corrosive Inhibitors:

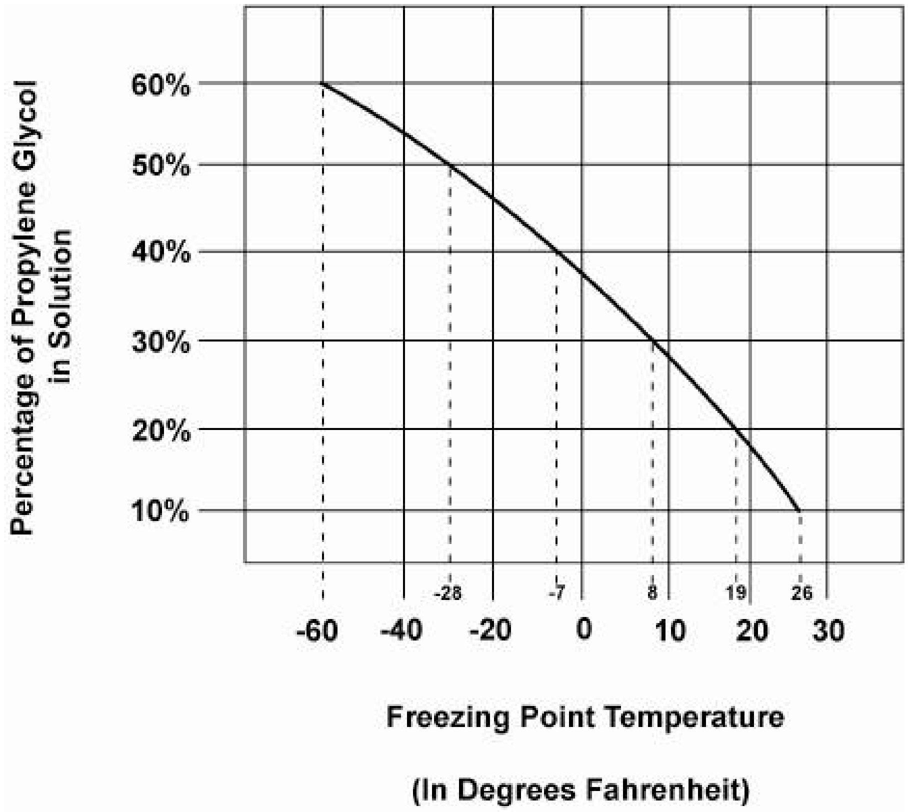
Another major function of antifreeze is to provide protection to the internal metal components of the Aqua-Hot Hydronic Heating System from corrosion and rust. Antifreeze is able to perform this function by the addition of rust- and anti-corrosive inhibitors, which are designed specifically to activate in a water solution.

Summary:

Antifreeze has three basic functions: freeze protection, boil-over protection, and anti-corrosion and rust protection.

Antifreeze is also primarily responsible for heat transfer; however, antifreeze itself does not possess acceptable heat transfer characteristics. Therefore, as water is an excellent heat conductor, it is added to the mixture. A 50/50 solution of propylene glycol antifreeze and water is recommended to provide the best performance combination of the aforementioned functions. If excess propylene glycol exists within an antifreeze and water heating solution, the water's heat absorption properties are compromised, which could ultimately inhibit the Aqua-Hot from providing adequate domestic hot water and interior heating.

Additionally, if the antifreeze and water heating solution contains less than 50 percent antifreeze, the freezing point is actually raised, resulting in less freeze protection. Please reference the attached graphical representation regarding the percentage of antifreeze to water and how it directly affects the solution's freezing point.


Percentage of Propylene Glycol in Solution
60%
50%
40%
30%
20%
10%
-28
-7
8
19
26
-60
-40
-20
0
10
20
30
Freezing Point Temperature
(In Degrees Fahrenheit)

2-YEAR LIMITED WARRANTY
AQUA-HOT® HYDRONIC HEATING SYSTEM
AHE-375-LP

Aqua-Hot Heating Systems Inc. warrants the Aqua-Hot Heater to be free from defects in material and workmanship under normal use and service for a period of two years on both parts and labor commencing upon the original date of registration of the vehicle. Replacement parts are warranted for the remainder of the Heater's standard warranty coverage or for six months, whichever is greater.

The intent of this warranty is to protect the Heater's end-user from such defects, which would occur in the manufacturing of the product. Thus, problems due to improper specifications, improper installations, improper use, the use of accessory parts or parts not authorized by Aqua-Hot Heating Systems Inc., repair by unauthorized persons, and damage or abuse of the Heater are specifically excluded from warranty coverage.

For additional information or to obtain a warranty repair authorization, please contact the Aqua-Hot Heating Systems Warranty Administrator at 1-800-685-4298 (8:00 AM to 5:00 PM Mountain Standard Time) or visit www.aqua-hot.com.

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